

DIGITAL DEVICES
Corporation



APE-FACE
PARALLEL PRINTER INTERFACE FOR ATARI COMPUTERS
User's Guide
Revised 9-20-84

Table of Contents

1. Introduction.	1
2. Installation.	2
3. Operation.	3
4. Technical Information.	4
5. Warranty Information.	5
6. User & Warranty Registration.	BACK COVER

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430 Tenth Street N.W., Suite N205
Atlanta, Georgia 30318
In Georgia (404) 872-4430
Outside Georgia (800) 554-4898

1. INTRODUCTION.

Thank you for selecting the APE-FACE for your printer interface needs. The APE-FACE allows you to connect any parallel printer you choose such as Epson, Star Micronics, C.Itoh and many others. The APE-FACE works with all Atari hardware and has been designed to be compatible with software written to use the Atari 850 Interface Modul. A "Centronics" style parallel interface is used so that installation and operation are very simple. By following the instructions in this manual you should have no problems with installing and using your new interface. If you do experience difficulty please contact your dealer or Digital Devices for assistance.

DIGITAL DEVICES sells two models of the APE-FACE with two different versions of each model. Each model is differentiated by whether or not it has an extra serial I/O connector for 'daisy chaining' other peripherals. Model numbers which end with the letter S have an extra serial connector.

Each version of a particular model is distinguished by its source of power. The Atari 1200XL computer requires a different power supply and, therefore, a different APE-FACE. Versions of the APE-FACE which begin with the number 12 are meant to work with only the 1200XL. Other versions will work with all other Atari computers.

APE-FACE XLP

400/800
600XL/800XL

APE-FACE 12XLP

1200XL

"End of Daisy Chain"

APE-FACE XLPS

400/800
600XL/800XL

APE-FACE 12XLPS

1200XL

"Extra Serial Connector"

2. INSTALLATION.

Installation of the APE-FACE is easy as plugging in a cable. However, to prevent any possible damage to your computer, printer, or interface, please follow these few steps.

ALL MODELS

1. Turn off the power to the computer and all peripherals.
2. Plug the flat ribbon cable into the connector on the back of the printer. Please note this connector will fit one way only. **DO NOT FORCE THE CONNECTOR.**
3. Plug the longer round cable into your Atari serial peripheral port. Again note that it will only fit one way. **DO NOT FORCE THE CONNECTOR.** (See note regarding daisy chaining).

NOTE: The APE-FACE XLP is designed to be the last peripheral in the Atari serial daisy chain. Therefore, plug the APE-FACE into the last available serial port (usually on a disk drive).

4. Turn power on to all equipment in this sequence:
1) Printer, 2) other peripheral, and 3) finally the computer.

NOTE: Most printers feature dip switches which allow you to configure the printer for various options and for different computers. If your printer is not performing the LINE FEED function consult the printer manual for proper setting of the dip switch. Normally you will find the switch will be set to "LINE FEED FROM HOST" and should be changed to "AUTO LINE FEED" or "CR + LF" for use with the Atari. You should always turn the printer off before changing dip switches.

The adhesive backed velcro strips included with the APE-FACE can be used to mount the plastic box to the side of your printer, under a desk, or where ever you like.

This completes the installation of the interface. Turn power on and you're ready to start printing! Please read on if you have an Atari 1200XL computer.

MODELS 12XLP(S) & 12XLP ONLY.

You must first unplug the power cord of the Atari wall transformer from the computer. This should be then plugged into either one of the two power jacks on the side of the 12XLP(S). The APE-FACE 12XLP(S) is supplied with an additional cord to supply current to the computer. This cord is to be plugged in between the APE-FACE 12XLP(S) and your 1200XL computer. Your APE-FACE should now be in-line with the Atari transformer and computer. Installation is now complete.

3. OPERATION.

After installing the APE-FACE, you may start printing right away. To output files to the printer simply execute normal print commands. If your printer is not doing a line feed (printing over and over on the same line), you will have to change a dip switch setting inside the printer. (see Installation p.2)

BASIC programming language.

To execute output commands under BASIC either the LPRINT statement or the OPEN, PRINT# statements may be used. LPRINT is the easiest to use. The test the printer type in the following short program.

```
10 LPRINT "This is a test for the APE-FACE. I hope it works!"
20 PRINT "IT WORKS!"
30 END
```

Then type "RUN" (return). The printer should have printed "This is a test..." and on the screen the words "IT WORKS!" should appear.

ATARIWRITER word processing program.

For correct output to the printer under the ATARIWRITER program, be sure to select PRINTER OPTION #3. This option is meant for all other printers besides those of Atari's.

GRAPHICS.

The APE-FACE is compatible with all Atari software written for the 850 Interface but graphics require special mention. The Atari graphics character set is unique to Atari. Printer manufacturers also have unique printer graphics character sets. The problem is that Atari graphics must be converted to graphics the printer can understand. The easiest way to do this is to purchase software which allows Atari computers to print graphics on a particular printer.

You can, of course, write your own software but for \$34.95 a program called HUMPTY DUMP from Kidstuff Software is a great buy. Contact our sales department for more details.

3. OPERATION. (cont.)

When writing your own graphics routines the End of line character (9B Hex) can not be sent to the APE-FACE. The EOL character will cause the APE-FACE to send a carriage return character (0D Hex) to the printer and delete the remainder of the current block of data stored within the APE-FACE.

Besides the above mentioned precaution, all data received by the APE-FACE is transferred directly through to the printer.

PROBLEMS.

If you get an ERROR 138 (Device time out) message, the Atari is not recognizing the APE-FACE as being ready and online. Check all connections and make sure power is turned on. Try again after resetting all equipment. If you can't get it working please call your dealer or DIGITAL DEVICES.

Contact our Customer Service Department at (404) 872-4430 before returning a defective APE-FACE. You must have a Return Authorization Number before sending merchandise directly to us.

4. TECHNICAL INFORMATION.

A. Technical Product Description.

The microprocessor-based APE-FACE allows interconnection of an industry-standard parallel printer with the Atari line of computers. The APE-FACE communicates bi-directionally with the Atari using a real-time TTL-level serial protocol. Printer data is extracted from the received information, converted into a standard parallel format, and sent to the printer.

The printer handler located in the Atari operating system controls the APE-FACE. This printer handler is called into action through normal use of printer-related instructions. The APE-FACE never loads software into the Atari, thus eliminating any chance of software conflict.

B. Specifications.

INTERFACE:	- Centronics parallel standard - ATARI serial - Power source (12XLP and 12XLPS only)
SIZE:	- 4.37"L, X3.25"W,X1.5"H - 15" ribbon cable/connector - 4' round cable/connector
POWER:	- 5V, .8W (Model XLP) - 9 VAC, 1VAC (Model 12XLP and 12XLPS)
Environment:	- Operating Temp. 10 C to 40 C - Storage Temp. -20 C to 70 C

C. Input.

The pin out of the Atari input (from the computer to the APE-FACE) is given below.

PIN NUMBER	FUNCTION	PIN NUMBER	FUNCTION
1	ATARI CLOCK IN	8	MOTOR CONTROL
2	ATARI CLOCK OUT	9	+5V
3	DATA INPUT	10	+5V/READY
4	GROUND	11	AUDIO INPUT
5	DATA OUTPUT	12	+12V *
6	GROUND	13	+5V
7	COMMAND		

* Not found on the Atari 1200XL

4. TECHNICAL INFORMATION. (cont.)

D. Output.

Pin-out of the printer connector from the APE-FACE is below.

<u>PIN NUMBER</u>	<u>FUNCTION</u>	<u>PIN NUMBER</u>	<u>FUNCTION</u>
1	STROBE *	19	GND
2	DATA 1	20	GND
3	DATA 2	21	GND
4	DATA 3	22	GND
5	DATA 4	23	GND
6	DATA 5	24	GND
7	DATA 6	25	GND
8	DATA 7	26	GND
9	DATA 8	27	GND
10	N/C	28	GND
11	BUSY	29	GND
12	N/C	30	GND
13	N/C	31	N/C
14	GND	32	N/C
15	GND	33	GND
16	GND	34	N/C
17	N/C	35	N/C
18	N/C	36	N/C

This represents a standard Centronics parallel interface scheme. However, some printers do not use the 36 pin connector and a special cable must be either purchased or made.

N/C - no connection GND - ground * - Active low signals.

5. WARRANTY.

To provide complete service on your Atari interface cable, the Customer Service Department MUST have record of warranty registration.

PLEASE READ, COMPLETE, and MAIL the Limited Warranty Information and Registration form as soon as possible.

Contact your dealer or Digital Devices Corp. BEFORE returning the APE-FACE for service.

LIMITED WARRANTY INFORMATION.

Digital Devices Corporation warrants to the original consumer/purchaser that this Digital Devices product shall be free from any defects in materials or workmanship for a period of one (1) year from the date of purchase. If any defect is discovered within the warranty period, Digital Devices sole obligation will be to repair or replace, at its election, the equipment free of charge on receipt of the unit and a copy of the bill of sale (properly packed and shipping prepaid).

This warranty covers any and all product defects incurred in normal use of the equipment and does not apply in the following cases:

- a) Loss or damage to the equipment due to abuse, mishandling, accident or failure to follow operation instructions.
- b) If the equipment has been serviced or modified by other than an authorized service center.
- c) If the equipment has been damaged by being used with any products not supplied by Digital Devices Corporation.

No implied warranty, including merchantability, applies to this equipment after one year, and no other express warranty or guarantee, except as previously mentioned, given by any person, firm or corporation, with respect to this equipment, shall bind Digital Devices Corporation.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the limitations or exclusions set forth may not apply to you. This warranty gives you specific legal rights, and you may also have rights which vary from state to state.

6. USER & WARRANTY REGISTRATION.

Thank you for purchasing a 'DIGITAL DEVICE'. To provide complete service on your equipment, we must have record of warranty registration. Please take a few moments to complete this warranty registration card and RETURN IT PROMPTLY!